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XXVIII.—*A Survey of the South-African Stenogyrinae, with Descriptions of several new Species.* By M. CONNOLLY.

[Plate VI.]

EVER since Krauss, in 1848, described, under the names of *Bulimus turriformis* and *B. linearis*, specimens of shells brought by J. A. Wahlberg from Natal and Mt. Mohapaani respectively, there has existed some confusion regarding them, which has rendered difficult the task of differentiating between them and other closely allied members of their family which abound over a great part of the Dark Continent.

Both Krauss's descriptions can be and have been applied by different authorities to totally different species from widely divergent localities, while his figures do not sufficiently bring out the details lacking in his descriptions.

Thanks to the courtesy of Dr. Sigalmar Théel, of the Royal Academy of Stockholm, I have been privileged to examine original specimens collected by Wahlberg and determined by Dr. Krauss. The results are of considerable importance, and would alone justify the appearance of a paper on the subject.

The determination of Krauss's species leaves without names several forms, some of which have been long known to collectors, but more or less inappropriately referred by them to *turriformis* or *linearis*. By the classification of some of

these forms I hope to do something towards unravelling the tangle that has existed with regard to them, and has made the arrangement of *Stenogyrinæ* one of the most difficult branches of South-African conchology.

A difficulty presenting itself at the outset is that of deciding how much latitude can be allowed for local and individual variation. As Dr. Pilsbry points out, some members of the family are peculiarly subject to dimorphism, two forms of the same shell, a slender and a stouter, with intermediate degrees, all other features remaining the same, often coexisting in the same locality. It is therefore obviously impossible to attach much importance to mere difference in the breadth of two shells, although it may entirely alter their general relative appearance. It must also be borne in mind that the live shell of nearly every South-African *Stenogyroid* in good condition is normally very pale bluish green (olivaceous) in colour, very thin, nearly transparent, with a bright gloss that varies from a high polish in the smoother species to a duller silky sheen when the sculpture is sufficiently pronounced to ridge, ever so slightly, the smoothness of the shell. Even live specimens, if exposed to climatic influence, are apt to lose their gloss and transparency and take on a general yellowish tinge, often before maturity, while dead shells soon become white and opaque, losing whatever gloss they originally possessed. Good live specimens, too, are often so affected by immersion in spirit as to lose much of their translucency, and become blotched with creamy stripes or stains.

Differences of the above nature, then, can only be regarded as of a certain minor relative importance; and the question remains, how much notice must be taken, in the division of the species, of the nature of their epidermis and sculpture, breadth of apex, shape and number of whorls, amount of perforation, and size and shape of aperture. With the exception of the last-mentioned, these points will be found to remain almost constant in even a large colony of most species under discussion, and to vary comparatively little in shells, attributable to the same species, gathered from widely different parts of the country; it is therefore from a close study of these details in particular that my inferences have been drawn.

In following the classification adopted by Dr. H. A. Pilsbry in his 'Manual of Conchology,' vol. xviii., I may point out that that author admits that the reference of certain species to one or other genus has been in many instances purely arbitrary. Some forms undoubtedly appear to be wrongly

placed at present; but while so much uncertainty exists regarding the habits and anatomy of many of the animals, I think it inadvisable to further complicate matters by a possibly erroneous reclassification.

In the following notes, every shell of which I have counted the whorls and taken the measurements has been so dealt with lying flat on its back, aperture upwards. The very important measurement which I call length of last whorl is that taken from the extreme base of the aperture to the centre of the suture immediately above it.

I have usually taken as type the largest specimen available. Nearly all Stenogyriinæ begin to reproduce before attaining full size, though, as a general rule, the presence of eggs in the ovary may be taken as proof that the shell is at least two-thirds grown. Some species, however, certainly begin to reproduce before their shells attain half the size of typically large specimens. Whether these individuals would, in ordinary course, continue growth to large dimensions, or whether their growth at the time of reproduction is almost completed, has not, I believe, yet been determined.

In the present survey I have taken as my northern geographical limit the Tropic of Capricorn, thus excluding the genus *Subulina*, which is a tropical rather than a South-African form.

With the exception of *Euonyma unicornis*, the types of all the new species have been presented by Messrs. Ponsonby, Farquhar, or myself to the British Museum.

REFERENCE LIST, WITH NOTES.

Family Achatinidæ.

Subfamily STENOGYRINÆ.

Genus EUONYMA, M. & P., 1906.

(Ann. & Mag. Nat. Hist. xviii. p. 316.)

Proposed by Melvill and Ponsonby for the sinistral form *Laocochlis*, and extended by Pilsbry to embrace the South-African group of "rather large, slender Stenogyroid snails" which he considers to differ from *Opeas* chiefly in their larger size and general aspect, and to be kept separate from *Stenogyra* solely by the diverse geographical distribution, *Stenogyra* in the restricted sense comprising only tropical American species.

It rests with some future student of anatomy to decide

whether *Euonyma* can stand. As at present constituted, it very possibly comprises representatives of three different genera; but, for reasons previously mentioned, I adhere to Pilsbry's arrangement of the genus, and at the same time place therein, provisionally, several forms hitherto undescribed, which, though nearly allied to *Opeas*, exceed it in average size.

1. *Euonyma linearis* (Krauss). (Pl. VI. fig. 4.)

1848. *Bulimus linearis*, Krs. Die südafr. Mollusken, p. 78, pl. v. fig. 3.
 1848. *Bulimus linearis*, Krs., Pfr. Mon. Hel. Viv. ii. p. 157.
 *1850. *Bulimus linearis*, Krs., Reeve, Conch. Icon. v. fig. 648.
 1845-55. *Bulimus linearis*, Krs. Conchyl. Cab. i. p. 257, pl. lxi. figs. 15-17.
 *1880. *Bulimus linearis*, Krs., Craven, Proc. Zool. Soc. p. 616.
 1881. *Stenogyra (Opeas) linearis*, Krs., Pfr. Nomencl. Hel. Viv. p. 321.
 *1889. *Bulimus linearis*, Krs., Morelet, Journ. de Conch. xxxvii. p. 19.
 1898. *Subulina linearis*, Krs., M. & P. Proc. Mal. Soc. iii. p. 179.
 *1898. *Opeas lineare*, Krs., Sturany, Südafr. Moll. p. 61 (reprint).
 1906. *Euonyma linearis*, Krs., Pilsbry, Man. of Conch. xviii. p. 44, pl. x. figs. 79, 80.

As the proper understanding of this species and its distribution is of importance, I append in tabular form (a) Krauss's description of the type and (b) Pfeiffer's of the shells in Krauss's collection:—

(a)	(b)
<i>B.</i> Testa subrimata, turrilo-subulata, tenui, nitidula, cornea, subtilissime striata; spira elongata, apice acutiuscula; anfractibus 10, subplanis, ultimo $\frac{1}{4}$ longitudinis æquante;	Testa subperforata, turrilo subulata, solidula, vix nitidula, corneo straminea, arcuatim striatula; apice acutiuscula; anfr. 10, convexiusculi, ultimus $\frac{3}{4}$ longitudinis subæquans; basi rotundatus;
columella stricta; apertura ovali;	columella recta, subverticalis; apertura elliptica, utrinque attenuata;
peristomate simplice, acuto; margine dextro arcuato; columellari breviter reflexo, basi appresso.	peristoma simplex, rectum; margine dextro antrorsum dilatato; columellari reflexo, perforationem fere tegente.
Long. 5·8, diam. 1·3 lin. [<i>i. e.</i> long. 12·27, diam. 2·75 mm.].	Long. 13½ mill., diam. 3½. Ap. 3 long., medio 2 lata (Coll. Krs. spec. max.).
In monte Mohapaani ad flumen Limpopo; legit J. A. Wahlberg.	Hab. in Monte Mohapaani, Afr. merid.

* It is doubtful to what actual species these authors refer.

Krauss further remarks that *B. linearis* is near akin to *B. turriiformis*, but "is much narrower and longer in proportion; almost cylindrical; plainly striated; has 10 whorls and a less elongated aperture. The striæ, which are only visible under a lens, and the outer lip are curved."

The cotype, kindly shown me by Dr. Théel, from the Stockholm Museum, is elongate, narrowly rimate, olivaceous, thin, almost transparent, not very glossy. Spire produced, very slowly tapering, outline a little swollen about the fifth whorl. Apex rounded. Whorls 8, somewhat convex, gradually increasing after the first, which is very small and rather mamillate; all except the first two plainly covered with fine, regular, curved striæ. Suture clearly defined, not at all fili-form. Aperture ovate, rather flattened at base. Peristome simple, acute. Outer lip slightly curved outwards, arched forward. Columella straight, margin very narrowly flatly reflexed over the small rima, which it almost conceals.

Shell 11.2 mm. long., 3.0 lat.; aperture 3.3×1.3 mm.; last whorl 5 mm.

The shell is full of eggs.

A small species, which might be better placed in *Opeas*; clearly differing from *E. crystallina*, M. & P., of Natal in its duller texture, more convex whorls, and almost fusiform contour; while *E. pietersburgensis*, Preston, appears to have more convex whorls and a shorter aperture.

Unfortunately there exists some doubt as to the exact whereabouts of the sole locality quoted by Krauss and Pfeiffer for this species—Mount Mohapaani,—which Krauss describes as being "beyond the Quathlamba" (or Drakensberg); "on the R. Limpopo"; and "deep in the interior." The nearest modern equivalent to Krauss's name is Mopani or Mokoro, a station on the Buluwayo line just south of the Lotsani R., a tributary of the Limpopo, doubtless deriving its name from the quantities of the rather unjustly ill-famed mopani tree which abounds in the neighbourhood. Dr. Théel, however, very kindly informs me that "Wahlberg in his own journal writes Mount Mokopoani, alternating with Moko-paani," in which case its modern name appears more likely to be Makapan, occurring more than once in the district between Pretoria and Pietersburg, and including Makapanspoort, near Pietpotgietersrust, where a party of Boer voortrekkers were entrapped by the native chiefs Mapela and Makapan in 1852, and Hermans Potgieter, their leader, flayed alive after all his companions had been killed.

Whichever be the true habitat of *E. linearis*, it is in the highest degree unlikely to have spread from its northern

fastness into Natal or Cape Colony, the more so as it has not yet been found in the intervening country. But owing to the lack of detail in Krauss's figure and the marked discrepancies between his and Pfeiffer's descriptions, it is hardly surprising to find that other shells, little resembling the original, from widely divergent districts, have been erroneously attributed, in museum and private collections, to *linearis*, and accepted by subsequent writers as typical of Krauss's species. Thus Reeve describes under this name a specimen in the Cuming collection as a "delicate glassy shell in which the suture is distinguished throughout by a fine elevated ridge" (an attribute only found, in South Africa, in *Hypolysia florentiæ*, M. & P.), and gives the rather mixed locality "Portnatal, South Africa (near the river Limpopo)." Sturany also refers to examples collected by Dr. Penther in Durban and Isipingo as having shiny surface and thread-like suture, neither of which exists in the cotype in the Stockholm Museum.

I have not seen the shells attributed to *linearis* by Craven from Winburg, O.R.C., or Lydenburg, Transvaal, but have looked through several series from many parts of Natal, Cape Colony, and Southern Transvaal, without finding anything to match the Stockholm cotype; and having regard to the foregoing geographical facts, I think it may be reasonably inferred that the specimens brought home by Wahlberg are possibly the only true examples of *E. linearis* yet known in Europe, and that all other records of its appearance have been made from specimens of *E. crystallina*, M. & P., *H. florentiæ*, M. & P., and possibly one or two other species, yet undescribed, each answering in more or less degree to Krauss's description and figure, but not agreeing with his type.

I may here add that Mr. E. L. Layard, in his manuscript notes, remarks: "*linearis*, Krauss, extends to Cape Town, where I have procured many specimens about damp places in gardens and yards, such as stones about a pump, on which water was continually dripping." It is impossible to say to what actual species Layard referred, but the note is of interest as the only record of the appearance of a *Stenogyra* in the Cape Peninsula, where nothing of the kind has been found in recent years.

2. *Euonyma pietersburgensis* (Preston).

1909. *Subulina pietersburgensis*, Preston, Ann. & Mag. Nat. Hist. iv. p. 499 (text-figure).

Hab. NORTHERN TRANSVAAL, Pietersburg (fid. *Preston*).

Not a *Subulina*. I place it provisionally in *Euonyma* on account of its kinship to *linearis*, from which it is apparently separable by its shorter aperture.

Euonyma pietersburgensis (Preston), var. *levis* (nov.).
(Pl. VI. fig. 8.)

Shell elongate, narrow, turritiform, subrimate, thin, glossy, transparent, pale olivaceous. Spire produced, acute, slowly and evenly tapering; apex rounded. Whorls $9\frac{1}{2}$, gradually increasing; slightly convex; the first two smooth, the very fine curved striæ on the remainder being scarcely visible without a lens. Aperture short, almost oblong, rather flattened at the base. Peristome simple, acute. Outer lip nearly straight, very slightly arched forward and a little retracted towards the base. Columella straight, margin extremely narrowly reflexed, almost entirely adnate. Callus none.

Shell 12.4×3.0 , aperture 3.1×1.3 , last whorl 4.9 mm.

Hab. TRANSVAAL, Warmbaths, Pienaar's Poort, Pietpotgietersrust (*Connolly*); Zoutpansberg (*Cregoe*).

Smoother and more polished than typical *E. pietersburgensis*, but running into it through large series. Hardly so slender a form as *E. crystallina*, M. & P., with comparatively shorter broader aperture. More glossy and less markedly striate than *E. linearis*, Krs.

E. pietersburgensis and the smoother var. *levis* agree rather nearly with both the original figure and description of *E. linearis*; as, however, they certainly do not agree with the Stockholm cotype of the latter, they must for the present be considered distinct.

3. *Euonyma crystallina* (Melv. & Pons.).

1896. *Subulina crystallina*, M. & P. Ann. & Mag. Nat. Hist. xviii. p. 316, pl. xvi. fig. 4.

1898. *Subulina crystallina*, M. & P. Proc. Mal. Soc. iii. p. 179.

1898. *Opeas crystallinum*, M. & P., Sturany, Süd-Afr. Moll. p. 60.

1906. *Euonyma crystallina*, M. & P., Pilsbry, Man. of Couch. xviii. p. 45, pl. x. fig. 81.

Hab. Very widely distributed over Zululand, Natal, and the Eastern Province, Cape Colony.

A slender little shell, very near the narrow border-line between *Opeas* and *Euonyma*. Far smoother and more highly polished than *E. linearis*, with rather less convex whorls and more regularly tapering spire.

Extremes of form may be found to differ so far in certain details as almost to appear separate species, but careful comparison of larger series renders it impossible to regard them as other than varieties of the same. It is probable that all reported occurrences of *E. linearis*, Krs., in the south-eastern corner of the subcontinent are referable to the present species or to *Hypolysia florentia*, M. & P.

4. *Euonyma turrimiformis* (Krauss). (Pl. VI. fig. 1.)

1848. *Bulinus turrimiformis*, Krs. Die südafr. Mollusken, p. 78, pl. v. fig. 2.
 1848. *Bulinus turrimiformis*, Krs., Pfr. Zeitschr. für Malak. p. 121.
 1853. *Bulinus turrimiformis*, Krs., Pfr. Mon. Hel. Viv. iii. p. 392.
 1880. *Bulinus (Stenogyra) turrimiformis*, Krs., Craven, P. Z. S. p. 615.
 1881. *Stenogyra (Opeas) turrimiformis*, Krs., Pfr. Nomencl. Hel. Viv. p. 320.
 1889. *Bulinus turrimiformis*, Krs., Morelet, Journ. de Conch. xxxvii. p. 19.
 1898. *Opeas turrimiforme*, Krs., Sturany, Südafr. Moll. p. 60.
 1898. *Subulina turrimiformis*, Krs., M. & P. Proc. Mal. Soc. iii. p. 179.
 1899. *Opeas turrimiforme*, Krs., Stur. Denkschr. k. Akad. Wiss. Wien, lxxvii. p. 596.
 1906. *Euonyma turrimiformis*, Krs., Pilsbry, Man. of Conch. xviii p. 43, pl. x. figs. 77, 78.

Not *Bulinus turrimiformis*, Krs., Reeve, Conch. Icon. 1850, spec. 652, Mus. Cuming, which, perhaps, most resembles *E. lanceolata*, Pfr., juv.

Hab. NATAL (*Wahlberg*, fid. *Krauss*). Widely distributed over the Eastern Province, Cape Colony; Natal; and Zululand. Craven's loc., Lydenburg, Transvaal, is very doubtful.

Krauss's description runs:—" *B. testa subrimata, elongato-turrita, tenui, nitida, cornea, sublævi; spira elongata, acutiuscula; anfractibus 9 convexiusculis, ultimo $\frac{1}{3}$ longitudinis æquante; columella stricta; apertura oblongo-ovali; peristomate simplice, acuto, recto, margine columellari breviter reflexo, basi adnato. Long. 7,5, diam. 2,2 lin.*" (*i. e.* long. 15·87, lat. 4·65 mm.). "In terra natalense; legit J. A. Wahlberg."

The specimen kindly lent me by Dr. Théel is elongate, turrimiform, rimate, olivaceous, thin, only moderately glossy, semitransparent. Spire produced, acute, evenly tapering. Apex rounded. Whorls 9, gradually increasing; but little convex; the first two smooth, remainder faintly sculptured with fine, regular, close, curved striæ, hardly visible to the naked eye before the sixth whorl. Suture well defined, but not deep. Aperture almost elliptical, rounded at base. Peri-

stone thin, simple. Outer lip hardly curved outwards (and doubtless would be slightly arched forwards in profile, but the present specimen is imperfect). Columella very slightly concave, margin triangularly reflexed over the rima.

Shell 15.6×4.2 , aperture 4.6×1.75 , last whorl 7.0 mm.

Hab. NATAL (Wahlberg).

The shell contains eggs. It agrees in form with Krauss's figure, and there is no reason to regard it as other than typical of *E. turiformis*. Much confusion has arisen with regard to this species, from the fact that it was described from shells which, though almost perhaps themselves mature, had hardly grown to half the proportions which the species is capable of attaining; Wahlberg's specimens, too, were of a more slender contour than generally occurs—facts which, combined with the use of the word "nitido" in the original description, have caused other forms to pass as typical of Krauss's species.

Now it appears obviously necessary to accept the Stockholm cotype as the basis on which to reconstruct the perplexing Natal *Euonymæ*; and, after allowing a margin for it to attain full proportions, remembering that it is a slender form of a species particularly subject to dimorphism, and taking into careful consideration its colour, form, texture, and sculpture, it seems that the two following, hitherto considered distinct species, should be regarded as at most varieties of *turiformis*.

Var. *acus* (Morelet). (Pl. VI. fig. 2.)

1889. *Stenogyra acus*, Morelet, Journ. de Conch. xxxvii. p. 8, pl. i. fig. 6.

1896. *Subulina glaucocyanea*, Melv. & Pons. Ann. & Mag. Nat. Hist. xviii. p. 317, pl. xvi. fig. 5.

1898. *Subulina acus* and *S. glaucocyanea*, M. & P. Proc. Mal. Soc. iii. p. 179.

1898. *Opeas acus* and *O. glaucocyaneum*, Stur. Sudafr. Moll. p. 60.

1906. *Euonyma acus* and *glaucocyanea*, Pilsbry, Man. of Conch. xviii. pp. 40 & 43, pl. x. figs. 70, 76.

Hab. Port Elizabeth.

A stouter form than the type, often containing 13 whorls and measuring up to 28 mm. in length.

The type of *acus* in the British Museum and the only two cotypes that I have seen are dead and bleached; but good specimens, agreeing with them in other respects, vary in colour from bluish to yellowish olivaceous, and are somewhat dull, with often little striation on the upper whorls. Although apically of the same thickness, they increase into a stouter form than Krauss's figure, but in colour, sculpture, silky gloss.

and other respects match the cotype in the Stockholm Museum. Allowing therefore for a degree of dimorphism and the fact that Krauss described his species from immature shells, it appears to me that *E. acus* and *E. turriiformis* are identical.

In a large series of *E. glaucocyanea*, M. & P., it will be found that the colour varies very considerably from bluish to yellowish olivaceous, the shell remaining the same in texture and consistency and all other details. *E. acus* is not glaucocyaneous, but in size, sculpture, form of spire, and shape of whorls it agrees with *E. glaucocyanea*. The columella, too, in both shells is rather peculiarly concave and similar. As the colour, its chief characteristic, is a variable quantity, it seems inadvisable to regard *glaucocyanea* as distinct from *acus*, which comes from the same vicinity.

Var. *sarissa*, Pilsbry.

1906. *Euonyma turriiformis sarissa*, Pilsb. Man. of Conch. xviii. p. 44, pl. x. figs. 84, 85.

Hab. NATAL (*Cassin*).

A yet stouter form, with apparently less sculpture. When more is known of the anatomy this may be found to constitute a different species. The largest specimen I have seen contains 10 whorls and measures 21 × 6 mm.

A shell of frequent occurrence in the neighbourhood of Grahamstown agrees very closely with the typical *turriiformis* of Natal, except for a distinctly shorter aperture, specimens which I have measured being respectively:—

Shell. mm.	Aperture. mm.	Last whorl. mm.
16·0 × 4·5	4·0 × 2·1	6·4
11·7 × 3·5	3·4 × 1·5	5·2
12·5 × 3·5	3·8 × 1·7	5·6

5. *Euonyma læocochlis* (Melv. & Pons.).

1896. *Subulina læocochlis*, M. & P. Ann. & Mag. Nat. Hist. xviii. p. 316, pl. xvi. fig. 3.

1898. *Subulina læocochlis*, M. & P. Proc. Mal. Soc. iii. p. 179.

1898. *Euonyma læocochlis*, M. & P., Sturany, Südafr. Moll. p. 62.

1906. *Euonyma læocochlis*, M. & P., Pilsbry, Man. of Conch. xviii. p. 39, pl. x. fig. 68.

Hab. CAPE COLONY, Humansdorp, St. Francis Bay.
An easily recognizable sinistral species.

6. *Euonyma cacuminata* (Melv. & Pons.).

1892. *Stenogyra cacuminata*, M. & P. Ann. & Mag. Nat. Hist. ix. p. 85, pl. vi. fig. 2.
 1898. *Subulina cacuminata*, M. & P. Proc. Mal. Soc. iii. p. 179.
 1898. *Opeas cacuminatum*, M. & P., Stur. Südafr. Moll. p. 60.
 1906. *Euonyma cacuminata*, M. & P., Pilsb. Man. of Conch. xviii. p. 42, pl. x. figs. 71, 73, 74.

Hab. CAPE COLONY, Bedford.

An imperforate highly polished shell, with very blunt apex and next to no sculpture; very easily distinguishable from any but the two succeeding species, both of which, however, are larger.

7. *Euonyma platyacme*, Melv. & Pons.

1907. *Euonyma platyacme*, M. & P. Ann. & Mag. Nat. Hist. xix. p. 101, pl. vi. fig. 15.
 1907. *Stenogyra beckeri*, Fulton, Ann. & Mag. Nat. Hist. xix. p. 154.

Hab. CAPE COLONY, Koi Road Bush (*Miss Hickey*); Pondoland (*Becker*); Hog's Back Mountain, Queenstown (*Farquhar*).

A large, imperforate, smooth, and very glossy species, with a remarkably obtuse apex, resembling *cacuminata*, M. & P., but far exceeding it in all dimensions. It possibly attains greater size than that of any specimen yet known to collectors.

S. beckeri was described by Fulton from shells collected by Dr. Becker in Pondoland, but as the description was published some weeks after that of *E. platyacme*, it gives place to the latter, which is the same species.

8. *Euonyma purcelli* (Melv. & Pons.).

1901. *Subulina purcelli*, M. & P. Ann. & Mag. Nat. Hist. viii. p. 317, pl. ii. fig. 6.
 1906. *Euonyma purcelli*, M. & P., Pilsb. Man. of Conch. xviii. p. 42, pl. x. fig. 75.

Hab. CAPE COLONY, Houw Hoek, Caledon Div. (*Purcell*).

Intermediate in size between *cacuminata* and *platyacme*, but distinguishable from either by its more convex whorls and the peculiar shape of its columella, which in most specimens is very noticeably obliquely truncate at the base, nearly approaching *Subulina*, though perhaps hardly sufficiently so to cause it to be placed in that genus. It was described from immature shells; the largest specimen that I have seen

contains $9\frac{1}{2}$ whorls, and measures 25×6.5 mm., aperture 6×3.2 , last whorl 9.8 mm.

9. *Euonyma lymneæformis* (Melv. & Pons.).

1901. *Obeliscus lymneæformis*, M. & P. Ann. & Mag. Nat. Hist. viii. p. 317, pl. ii. fig. 5.
 1906. *Euonyma lymneæformis*, M. & P., Pilsbry, Man. of Conch. xviii. p. 39, pl. x. fig. 69.

Hab. NATAL, Karkloof Bush (*McBean*).

A conspicuous shell, easily distinguishable by the author's illustration. Only two specimens, however, were originally discovered, and subsequent search in the same locality has failed to reveal more. It seems therefore just possible that it may eventually prove to be but an abnormal variety of *E. lanceolata*, Pfr., which abounds in the neighbourhood and with which it has several features in common.

10. *Euonyma lanceolata* (Pfeiffer).

1854. *Bulinus lanceolatus*, Pfr. Proc. Zool. Soc. p. 292.
 1855. *Bulinus lanceolatus*, Pfr. (*Obeliscus*) Mal. Blätt. ii. p. 156.
 1857. *Bulinus micans*, Pfr. Mal. Blätt. iv. p. 156.
 1859. *Bulinus micans*, Pfr. Mon. Hel. Viv. iv. p. 452.
 1859. *Bulinus lanceolatus*, Pfr. Mon. Hel. Viv. iv. p. 455.
 1881. *Stenogyra lanceolata*, Pfr. (*Obeliscus*) Nomenclator, p. 319.
 1898. *Obeliscus lanceolatus*, Pfr., M. & P. Proc. Mal. Soc. iii. p. 179.
 1893. *Stenogyra (Obeliscus) lanceolata*, Pfr., Stur. Südafr. Moll. p. 59.
 1906. *Euonyma lanceolata*, Pfr., Pilsb. Man. of Conch. xviii. p. 40.

Widely distributed over Natal and Zululand. Specimens in the British Museum from Delagoa Bay.

A large species, with a shiny straw-coloured shell and comparatively faint striation, sometimes attaining such measurements as 59 mm. in length and 15 in breadth.

E. micans was described by Pfeiffer from shells collected in Natal by Plant, in the Cuming collection. It seems conceivable from the description that the species intended by Pfeiffer was that since described by Burnup as *natalensis*. But, whether owing to substitution or erroneous classification, all Cuming's specimens, including the so-called type, referred by him to *micans* in the British Museum are identical with *lanceolata*. The other more highly sculptured species was therefore left without a name, an omission very properly rectified when it was brought to notice under its present name of *natalensis*.

E. lanceolata never having been figured, an illustration of the type in the British Museum is here appended. Length 52 mm.



Euonyma lanceolata (Pfeiffer).

11. *Euonyma natalensis* (Burnup).

1905. *Oboliscus natalensis*, Burnup, Proc. Mal. Soc. vi. p. 304, pl. xvi. fig. 9.

1906. *Euonyma natalensis*, Burnup, Pilsbry, Man. of Conch. xviii. pp. 41, 339, pl. x. fig. 72, pl. xxxi. figs. 12, 13.

Hab. NATAL, Umbogintwini; Table Mountain; Equeefa; Pietermaritzburg (*Burnup*).

Another large species, distinguishable from *E. lanceolata*, Pfr., by its clearly marked close liration, which imparts a silky lustre to the shell. The largest specimen in coll. Burnup is 57.5 mm. in length.

12. *Euonyma pruizenensis**, sp. n. (Pl. VI. fig. 11.)

Shell elongate, turritiform, very narrowly rimate, olivaceous, rather thin, hardly glossy, semitransparent. Spire produced, moderately acute, apex bluntly rounded. Whorls (spec. max.) $8\frac{1}{2}$, the apical small, smooth, mamillate; the

* Pronounced *pruizenensis*.

second and third about equal in size and more convex than the rest, which become less ventricose as they increase in distance between sutures, the last one or two being unusually flattened. The second whorl microscopically, remainder clearly covered with rather coarse curved striæ. Suture impressed. Aperture ovate, slightly rounded at base. Peristome thin, simple. Outer lip a little outcurved, arched forward in profile. Columella erect, margin narrowly reflexed. Callus none.

Dimensions (spec. max. in Brit. Mus.): shell 20.2×5.1 , aperture 5.3×2.5 , last whorl 8.7 mm.

Hab. NORTHERN TRANSVAAL, Pruizen; Bushveldt near Pietpotgietersrust (*Connolly*).

Although the species is very easily distinguishable, it varies greatly at different stages of growth, and the largest specimens that I have been able to procure are unfortunately dead and calcined. The contour of the spire is variable, sometimes evenly tapering, sometimes rather crooked and slightly attenuate towards the apex. The columella, too, in immature specimens is straight, while the slightly reflexed margin leaves a clearly visible rima; in mature shells it becomes twisted and the margin practically adnate, so that the shell is almost imperforate. *E. pruizenensis* differs from *E. cacuminata*, M. & P., whose form it somewhat resembles, in its longer aperture, dullish epidermis, and minute rima, *E. cacuminata* being highly glossy and imperforate.

The presence of sculpture on all but the mamillate apex of the new species is a noteworthy feature, the marking on the second whorl being almost visible without a lens.

13. *Euonyma siliqua*, sp. n. (Pl. VI. fig. 10.)

Shell elongate, rather subulate, imperforate, pale olivaceous, usually tinged with yellow, thin, normally glossy and nearly transparent. Spire produced, very slightly gradate, evenly but rather slowly tapering to the very bluntly rounded apex, which is nearly 1 mm. across. Whorls 8, pretty regularly and rather rapidly increasing in distance between sutures, but varying noticeably in circumference in different shells; convex, rather deeply impressed at the suture; the first two smooth, remainder rather irregularly sculptured with very fine curved striæ, plainly visible at intervals to the naked eye, but otherwise hardly discernible without a lens. Aperture ovate, rounded at the base; peristome thin, simple; outer lip curved outward and slightly bowed forward; columella erect, thickened and twisted upward, with no trace of reflection.

Shell 13.8×4.3 , aperture 3.5×1.7 , last whorl 6.5 mm.

Hab. NATAL, O.R.C., Junction Station (*Connolly*, six specimens).

The species is peculiarly subject to dimorphism, other specimens measuring:—

Shell. mm.	Aperture. mm.	Last whorl. mm.
13.8×4.0	3.6×1.8	6.5
12.4×4.2	3.7×1.5	6.4
10.3×3.5	3.2×1.7	5.7

A rather short thick species, with a very blunt apex, differing from all others of its size in the entire lack of any attempt at perforation. The fact that the smallest specimen measured above contains eggs supports the idea that the larger ones are at least almost mature.

14. *Euonyma varia*, sp. n. (Pl. VI. figs. 5, 6, 7.)

Shell elongate, narrow, turritiform, rimate, pale yellowish olivaceous, thin, moderately glossy and transparent. Spire produced, acute, apex narrowly rounded. Whorls $10\frac{1}{2}$, slightly convex, more so just below the suture; gradually and regularly increasing; the first two smooth, remainder covered with numberless very fine, faint, regular, curved, close-set striae, imparting a slight silky gloss to the shell. Suture somewhat impressed. Aperture ovate, bluntly rounded at base. Peristome thin, simple. Outer lip a little swollen and then incurved, rather sharply arched forward to about $1\frac{1}{2}$ mm. below the suture, and then noticeably receding in an almost straight line to the base. Columella nearly straight, margin narrowly triangularly reflexed. Callus none.

Shell 17.0×4.1 , aperture 4.2×1.8 , last whorl 6.6 mm.

Hab. TRANSVAAL, Piensaars Poort; Pretoria District (*Connolly*); Potchefstroom (*Miss Cachet*); Zoutpansberg (*Cregoe*).

A widely distributed species, to be found in many museum and private collections. Extreme forms differ very considerably in contour. The type, from Piensaars Poort, is about intermediate, with an evenly tapering spire and moderate apex. In a more slender form from Zwart Kop the apical whorls are finer and narrower, giving a more tapering and often slightly crooked appearance to the spire; in a coarser form the apex is blunter and the spire approaches *E. turritiformis* in contour. The gloss and transparency is

soon lost, even in live shells, which, if much exposed, become dull and opaque. The striation on the upper whorls is in most examples almost microscopic, and is throughout far more difficult to distinguish on fresh specimens than on weather-beaten ones. The largest shell I have yet seen of this species, from Zwart Kop, measures 19.5×4.5 mm., aperture 4.2×2.1 , last whorl 7.2 mm.

In a genus like *Euonyma*, whose members exhibit so great a diversity of form, it is only after considerable hesitation that I have ventured to differentiate between the present most variable species and the equally variable *E. turrisformis*, Krs., as, although the types look at first sight quite different, extremes of form may be found to run uncommonly near to one another. In *E. varia*, however, the whorls increase less rapidly and the last whorl and aperture are consequently slightly shorter than in *turrisformis*. The epidermis, too, is of a less silky sheen and more stramineous colour. Mr. Cregoe's specimens from Zoutpansberg present one or two minor points of difference from the type, but, allowing a little for local variation and without further knowledge of the anatomy of the animal, it appears inadvisable to separate them.

15. *Euonyma standeri*, sp. n. (Pl. VI. fig. 9.)

Shell elongate, turrisform, rimate, pale yellowish olivaceous, rather dull, with a silky sheen, thin, semitransparent; spire produced, gradually and evenly tapering, apex rounded, particularly blunt for the size of the shell, being 1 mm. in diameter. Whorls $7\frac{1}{2}$, regularly increasing, moderately convex, the first two smooth, remainder thickly covered with close slightly curved striæ of rather irregular depth. Suture clearly defined. Aperture ovate, rounded at base, rather large in proportion. Peristome simple, acute; outer lip slightly outcurved; hardly bowed forward, but a little retracted toward the base; columella straight, margin triangularly reflexed.

Shell 14.0×4.5 , aperture 4.5×1.9 , last whorl 6.7 mm.

Hab. TRANSVAAL, Stander's Kop (*Connolly*, a large series).

Adult shells sometimes show traces of a slight callus. I have seen eggs in an example only 9.0 mm. long.

Possibly only a local form of *turrisformis*, but distinguishable by its dull silky epidermis, longer apical whorls, and peculiarly blunt apex. In contour it closely resembles *E. siliqua*, a more shining imperforate shell.

16. *Eumyoma unicornis*, sp. n. (Pl. VI. fig. 3.)

Shell elongate, narrow-turiform, rimate, olivaceous, very thin, rather glossy and transparent. Spire much produced, acute, very slowly evenly tapering; apex narrowly rounded. Whorls $11\frac{1}{4}$, very gradually increasing, convex, the first two smooth, remainder sculptured with innumerable close, curved, regular striæ, which are not apparent to the naked eye until the fifth whorl. Suture rather deep. Aperture short, nearly elliptical, base rounded. Peristome simple, acute. Outer lip very slightly curved outward, rather sharply arched forward about 1.3 mm. below the suture, and then receding rather rapidly to the base. Columella slightly concave, margin narrowly triangularly reflexed. Callus none.

Shell 21×4.4 , aperture 4.2×2.5 , last whorl 7 mm. Type in my collection.

Hab. TRANSVAAL, Schanz Kop, Pretoria (*Connolly*); Potchefstroom (*Miss Livingston*). CAPE COLONY, Cradock (*Farguhar*).

Although very nearly approaching *E. varia*, the present species differs constantly in having one more whorl and slightly shorter aperture in comparison to its size, and in its rather more convex whorls.

The Cradock form has a rather blunter apex and very slightly coarser striation than the type; but without further knowledge of the anatomy it is inadvisable to regard it as different.

Genus OPEAS, Albers, 1850.

(Die Heliceen, p. 175.)

Small shells, rarely exceeding 13 mm. in length, with a large, smooth, obtuse apex; generally separable from *Eumyoma* by their smaller size and from *Curvella* by their more slender form.

1. *Opeas crawfordi* (Melv. & Pons.).

1893. *Stenogyra crawfordi*, M. & P. Ann. & Mag. Nat. Hist. xii. p. 105, pl. iii. fig. 4.

1898. *Subulina crawfordi*, M. & P. Proc. Mal. Soc. iii. p. 179.

1898. *Opeas crawfordi*, M. & P., Stur. Südafr. Moll. p. 61.

1906. *Opeas crawfordi*, M. & P., Pilsb. Man. of Conch. xviii. p. 149, pl. xv. fig. 74.

Hab. CAPE COLONY, Van Staaden's River (*Crawford*).

A very small species, resembling in shape many others distributed over the southern portion of the peninsula, but

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not approaching them in size. The figure accompanying the original description is very misleading, as it appears to portray a far coarser form than the type.

2. *Opeas durbanense*, Sturany.

1898. *Opeas durbanense*, Stur. Südafr. Moll. p. 61, pl. ii. figs. 42-44 (reprint).
 1899. *Opeas durbanense*, Stur. Denkschr. k. Akad. Wiss. Wien, lxxvii. p. 597, pl. ii. figs. 42-44.
 1906. *Opeas durbanense*, Stur., Pilsbry, Man. of Conch. xviii. p. 149, pl. xv. figs. 75, 76.

Hab. NATAL, Durban (*Dr. Penther*).

Described from a single specimen; I have not heard of any more having been discovered.

3. *Opeas mcbeani*, Melv. & Pons.

1903. *Opeas mcbeani*, M. & P. Ann. & Mag. Nat. Hist. xii. p. 604, pl. xxxi. fig. 8.
 1906. *Opeas mcbeani*, M. & P., Pilsbry, Man. of Conch. xviii. p. 150, pl. xv. fig. 77.

Hab. TRANSVAAL, Boksberg (*Burnup*, *fid. M. & P.*); Hennop's River, near Pretoria (*Connolly*); Middelburg (in Coll. Ponsonby).

A very slender shell, smaller than *Euonyma crystallina*, M. & P., and less highly sculptured than *O. strigile*, M. & P., from which it also differs in its less fusiform contour.

4. *Opeas strigile* (Melv. & Pons.).

1901. *Subulina strigilis*, M. & P. Ann. & Mag. Nat. Hist. viii. p. 318, pl. ii. fig. 7.
 1906. *Opeas strigilis*, M. & P., Pilsbry, Man. of Conch. xviii. p. 150, pl. xv. fig. 57.

Hab. NATAL, Karkloof (*McBean*); Dargle, Edendale, Pietermaritzburg, Enon Bush, Richmond, Hilton Road (*Burnup*).

A beautifully striate little species with rather fusiform contour.

5. *Opeas tugelense* (Melv. & Pons.).

1897. *Subulina tugelensis*, M. & P. Ann. & Mag. Nat. Hist. xix. p. 637, pl. xvii. fig. 9.
 1898. *Subulina tugelensis*, M. & P. Proc. Mal. Soc. iii. p. 179.
 1898. *Opeas tugelense*, M. & P., Sturany, Südafr. Moll. p. 61.
 1906. *Opeas tugelense*, M. & P., Pilsbry, Man. of Conch. xviii. p. 150, pl. xv. fig. 78.

Hab. NATAL, Lower Tugela River, Pinetown, Tongaat (*Burnup*); Pietermaritzburg (*Connolly*). Young shells, apparently inseparable from this species, from DELAGOA BAY (*Connolly*).

A stouter form than *Euonyma crystallina*, and easily distinguished from *E. turriiformis* by its almost colourless sculptureless whorls and highly polished transparent shell. Even more variable in breadth than most members of the subfamily.

The type was described as being 14 mm. in length and 4 in breadth, but I have seen specimens measuring 12.0 × 3.5 and 13.5 × 5.5 respectively.

6. *Opeas eulimoides* (Preston).

1900. *Subulina eulimoides*, Prest. Ann. & Mag. Nat. Hist. iv. p. 499 (fig.).

Hab. NATAL, Howick.

Evidently not a *Subulina*, as the columella is straight, and apparently best placed in *Opeas* on account of its small size. I have not seen this species; Mr. Preston informs me that the whorls are much less convex than in *E. crystallina*, M. & P., to which it appears rather nearly allied.

7. *Opeas lepidum*, sp. n. (Pl. VI. fig. 12.)

Shell small, elongate, turriiform, subimate, pale olivaceous, thin, glossy, semitransparent. Spire produced, acute, evenly tapering, apex rounded. Whorls 6, rather convex, regularly increasing; the first smooth, the second nearly so, remainder extremely faintly sculptured with regular curved striae, which are only just visible to the naked eye. Suture clearly defined. Aperture short, oblong-oval, base rounded. Peristome thin, simple. Outer lip strongly curved outward and gently arched forward. Columella very slightly concave, margin narrowly reflexed, almost concealing the minute rima. Callus none.

Shell 7.0 × 2.5, aperture 2.3 × 1.2, last whorl 3.7 mm.

Hab. CAPE COLONY, Fern Kloof, Grahamstown (*Farquhar*); Port Elizabeth (*Crawford*).

Mr. Farquhar observes that this pretty little species regularly occurs, seldom exceeding the above-quoted dimensions, in a locality very favourable for producing the full growth of the shell. It compares closely with the figure and description, but not with actual specimens in the British Museum, of *Curvella delicata*, "Gibbons" Taylor, while it cannot be associated with such as *O. clavulinum*, Potiez and Michaux,

or *O. spinula*, Morelet, which nearly approaches it in form. While very near the border-line between *Opeas* and *Curvella*, I consider the comparative slenderness of its contour sufficient reason for placing the present species in *Opeas*.

Genus CURVELLA, Chaper, 1885.

(Bull. Soc. Zool. de France, x. pp. 48, 49.)

(= *Hapalus*, Albers, 1850, non *Hapalus*, Billberg, 1820.)

Small shells, so named because of the forward curve of the outer lip. Very near *Opeas*, from which they are generally chiefly separable by their shorter wider contour and smaller number of whorls.

1. *Curvella catarractæ* (Melv. & Pons.).

1897. *Hapalus catarractæ*, M. & P. Ann. & Mag. Nat. Hist. xix. p. 635, pl. xvii. fig. 4.

1898. *Curvella catarractæ*, M. & P. Proc. Mal. Soc. iii. p. 179.

1898. *Hapalus catarractæ*, M. & P., Stur. Südafr. Moll. p. 62.

1906. *Curvella catarractæ*, M. & P., Pilsb. Man. of Conch. xviii. p. 59, pl. viii. fig. 23.

Hab. NATAL, Howick, Pietermaritzburg, Stella Bush (*Burnup*); Durban (*Penther*, fid. *Sturany*).

A rather characterless little shell with obtuse apex and rather ventricose body-whorl. The largest specimen in Coll. Burnup measures 6.5×3.5 mm. Like others of the genus, this species has a partiality for living in ants' nests, where Mr. Burnup informs me he has more than once found them.

2. *Curvella globosa* (Melv. & Pons.).

1898. *Hapalus globosus*, M. & P. Ann. & Mag. Nat. Hist. ii. p. 128, pl. vii. fig. 6.

1898. *Curvella globosa*, M. & P. Proc. Mal. Soc. iii. p. 179.

1906. *Curvella globosa*, M. & P., Pilsb. Man. of Conch. xviii. p. 61, pl. viii. fig. 31.

Hab. NATAL, Stella Bush (*Burnup*). CAPE COLONY, York, Drakensberg, Griqualand East (*Farquhar*).

A small shell, whose whorls, especially the last, are more swollen in comparison than those of any of its allies. With this exception, however, it bears a marked resemblance to the preceding species.

3. *Curvella sinuosa*, Melv. & Pons.

1899. *Curvella sinuosa*, M. & P. Ann. & Mag. Nat. Hist. iv. p. 198, pl. iii. fig. 12.

1905. *Curvella sinuosa*, M. & P., Pilsb. Man. of Conch. xviii. p. 61, pl. viii. fig. 32.

Hab. NATAL, Umkomaas (*Burnup*).

“An elegant, fusiform *Curvella* . . . whose chief peculiarity is its sinuous lip” (*M. & P.*).

4. *Curvella caloglypta*, Melv. & Pons.

1901. *Curvella caloglypta*, M. & P. Ann. & Mag. Nat. Hist. viii. p. 320, pl. ii. fig. 12.

1906. *Curvella caloglypta*, M. & P., Pilsb. Man. of Conch. xviii. p. 59, pl. viii. fig. 22.

Hab. NATAL, Pietermaritzburg (*Burnup*).

A beautifully sculptured little shell, at once distinguishable from its South-African confrères.

5. *Curvella croslyi*, Burnup.

1905. *Curvella croslyi*, Bp. Proc. Mal. Soc. vi. p. 302, pl. xvi. figs. 3, 4.

1906. *Curvella croslyi*, Bp., Pilsb. Man. of Conch. xviii. p. 59, pl. viii. figs. 27, 28.

Hab. ZULULAND, Makowe (*Crosly*).

Much the largest of yet known South-African *Curvella*.

6. *Curvella straminea*, Burnup.

1905. *Curvella straminea*, Bp. Proc. Mal. Soc. vi. p. 303, pl. xvi. figs. 5, 6.

1906. *Curvella straminea*, Bp., Pilsb. Man. of Conch. xviii. p. 62, pl. viii. figs. 36, 37.

Hab. CAPE COLONY, Walmer (*Miss Hickoy*).

“More elongate and slender” (than the preceding forms), “and conspicuous by its straw-colour and distinct sculpture” (*Burnup*).

7. *Curvella succinea*, Burnup.

1905. *Curvella succinea*, Bp. Proc. Mal. Soc. vi. p. 303, pl. xvi. figs. 7, 8.

1906. *Curvella succinea*, Bp., Pilsb. Man. of Conch. xviii. p. 62, pl. viii. figs. 38, 39.

Hab. CAPE COLONY, Maeström Forest, Bedford (*Farquhar*).

“Distinct from *C. straminea* by its smaller size, richer” (pale horn) “colour, less ventricose whorls, and shallower suture” (*Burnup*).

8. *Curvella elevata*, Burnup.

1905. *Curvella elevata*, Bp. Proc. Mal. Soc. vi. p. 304, pl. xvi. figs. 10, 11.

1906. *Curvella elevata*, Bp., Pilsb. Man. of Conch. xviii. p. 60, pl. viii. figs. 29, 30.

Hab. CAPE COLONY, Mountain Drive, Grahamstown (*Farquhar*).

A comparatively slender form, the spire being more produced, with straighter sides, than in most of the foregoing.

9. *Curvella majubana*, sp. n. (Pl. VI. fig. 13.)

Shell conic-ovate, narrowly umbilicate, thin, glossy, transparent, pale olivaceous. Spire produced, evenly tapering, apex rather acute. Whorls 6, regularly and somewhat rapidly increasing, slightly convex, the first two smooth, remainder beautifully sculptured with very fine, clear, close striæ, following the curve of the outer lip. Suture simple, of moderate depth. Aperture ovate, rounded at the base. Peristome simple, acute. Outer lip slightly curved outward and about equally arcuate forward. Columella straight, margin narrowly triangularly reflexed over (nearly concealing) the umbilicus.

Shell 9.6 × 3.4, aperture 3.5 × 1.6, last whorl 5.3 mm.

Hab. NATAL, Amajuba, in an ants' nest (*Connolly*).

A pretty shell, the most graceful of yet known South-African *Curvella*, and easily distinguished by the symmetry of its form and acuteness of its apex. Its nearest ally is the East-African *C. associata*, E. A. Smith, from which it differs chiefly in its finer apex and fainter sculpture. In dead specimens the shell is often clouded with yellowish white. Adult shells usually show trace of a white callus.

10. *Curvella saundersæ*, sp. n. (Pl. VI. fig. 14.)

Shell conic-ovate, rimate, olivaceous, thin, glossy, transparent. Spire produced, evenly tapering; apex rounded. Whorls 5½, rather rapidly increasing, slightly convex, the first two smooth, remainder extremely faintly marked with close curved striæ, barely visible to the naked eye. Suture rather shallow. Aperture ovate, bluntly rounded at base. Peristome simple, acute. Outer lip slightly curved outward and arcuate forward. Columella straight, margin narrowly triangularly reflexed. Callus none. Shell 7.6 × 3.4, aperture 3.2 × 1.5, last whorl 4.9 mm.

Hab. ZULULAND, Eshowe (*Lady Saunders*).

A nearly smooth graceful species, whose nearest alliance is with *C. majubana*, from which it is separated by its blunter apex and fainter striation.

11. *Curvella modesta*, sp. n. (Pl. VI. fig. 15.)

Shell small, conic-ovate, rather subulate, rimate, pale olivaceous, thin, glossy, almost transparent. Spire produced, acute, evenly tapering, apex rounded. Whorls $5\frac{1}{2}$, regularly and rather rapidly increasing in distance between sutures, rather convex, covered, after the first $1\frac{1}{2}$, with fine, regular, curved striæ, which are almost invisible without a strong lens. Suture well defined, of moderate depth. Aperture ovate, rounded at base. Peristome simple, acuto. Outer lip somewhat curved outwards and slightly arched forward. Columella very slightly concave, margin narrowly reflexed.

Shell 6.8×2.8 , aperture 2.5×1.2 , last whorl 4 mm.

Hab. CAPE COLONY, Dassie Crantz, Grahamstown; Cradock Commonage (*Farquhar*).

A difficult little species, recalling both *C. elevata* and *C. straminea*, Burnup. From the latter it differs chiefly in colour, being pale olivaceous instead of stramineous, while it is a rather more slender form than *C. elevata*.

Genus HYPOLYSIA, Melv. & Pons., 1901.

(Ann. & Mag. Nat. Hist. viii. 1901, p. 318.)

A slender form, distinct from *Opeas* through its projecting evolute outer lip.

1. *Hypolysia florentiæ*, Melv. & Pons.

1901. *Hypolysia florentiæ*, M. & P. Ann. & Mag. Nat. Hist. viii. p. 318, pl. ii. fig. 8.

1903. *Hypolysia florentiæ*, M. & P. Ann. & Mag. Nat. Hist. xii. p. 596, pl. xxxii. fig. 13.

1905. *Hypolysia florentiæ*, M. & P., Pilsb. Man. of Conch. xviii. p. 37, pl. x. figs. 66, 67.

Hab. Widely distributed through Natal, Zululand, and the Eastern Province of Cape Colony.

A very finely striate, transparent, narrowly rimate shell, generally somewhat fusiform in contour, with distinctly filiform suture.

This species is unusually subject to dimorphism, some specimens from Eshowe being nearly double the width of the type, though otherwise agreeing with it in all respects.

Owing to the sculpture following the peculiar curve of the outer lip, it is not difficult to distinguish *Hypolysia* even if the evolute lip itself is broken.

EXPLANATION OF PLATE VI.

- Fig. 1. *Euonyma turriiformis*, Krs. (Stockholm Museum).
 Fig. 2. *Euonyma turriiformis*, Krs., var. *acus*, Morelet (type, in British Museum).
 Fig. 3. *Euonyma unicornis*, sp. n.
 Fig. 4. *Euonyma linearis*, Krs. (Stockholm Museum).
 Fig. 5. *Euonyma varia*, sp. n. (type).
 Figs. 6, 7. *Euonyma varia*, sp. n.
 Fig. 8. *Euonyma pietersburgensis*, Preston, var. *levis*, nov.
 Fig. 9. *Euonyma stunderi*, sp. n.
 Fig. 10. *Euonyma siliqua*, sp. n.
 Fig. 11. *Euonyma pruizenensis*, sp. n.
 Fig. 12. *Opeas lepidum*, sp. n.
 Fig. 13. *Curvella majubana*, sp. n.
 Fig. 14. *Curvella saundersæ*, sp. n.
 Fig. 15. *Curvella modesta*, sp. n.

XXIX.—*Descriptions and Records of Bees.*—XXXII.

By T. D. A. COCKERELL, University of Colorado.

Pseudoponurgus æthiops (Cresson).

Berkeley (near Denver), Colorado (*Oslar*). In Coll. Baker.

Halictus clelandi, sp. n.

♂.—Length about 6 mm.

Head and thorax black, abdomen and legs dark reddish brown; pubescence greyish white, rather abundant; lower part of clypeus cream-colour, the actual margin ferruginous; mandibles ferruginous, dark at base; flagellum long, crenulate, dark coffee-brown beneath.

This cannot be the male of *H. globosus*, as the thorax has no æneous tinge, and the second r. n. and third t.-c. are very distinct (*H. cognatus*, Sm., is probably the male of *globosus*). The much darker flagellum easily distinguishes it from *H. oxleyi*. Head broad, eyes converging below, face with much light hair; front minutely, very densely punctured, a very small space in front of ocellus smooth and shining; mesothorax hairy, finely and densely punctured, but shining; area of metathorax semilunar, with fine irregular rugæ extending over the whole surface; pleura shining; tegulæ rather large, smooth, pale reddish testaceous. Wings ample, hyaline, nervures and stigma pale testaceous; second s.m. receiving first r. n. before the end; third s.m. very much